

# WAFER PATTERN BUTTERFLY VALVE TYPE Z 011-A



A universally applicable wafer type valve acc. to EN 593.  
The large variety of basic materials allows applications in different industries.

## TECHNICAL DATA

Nominal diameter:	DN 20 - DN 1200 (DN 20 only PN 10/16)
Face-to-face:	EN 558 Series 20 ISO 5752 Series 20 API 609 Table 1
Flange accommodation:	EN 1092 PN 6/10/16 ASME Class 150 AS 4087 PN 16
Flange Surface Design:	EN 1092 Form A/B ASME RF, FF
Top flange:	EN ISO 5211
Marking:	EN 19
Tightness check:	EN 12266 (Leakage rate A) ISO 5208, Category 3
Temperature range:	-40°C to +200°C (depending on pressure, medium and material)
Operating pressure:	max. 16 bar

## FEATURES

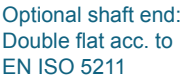
- Absolutely tight sealing with flow in either direction
- The valve body and disc are accurately machined which results in low operating torque and long service life and reliability
- Triple shaft bearings prevent shaft deflection and guarantee optimum guidance even after many years of operational service
- Four flange mounting holes ensure correct valve location when installing
- Can be installed in any desired position
- Maintenance-free
- Can be disassemble, material-specific recycling possible
- For paint and lacquers, a silicon-free version is available

## GENERAL APPLICATIONS:

- Chemical and petrochemical industries
- Water and waste water technology
- Pneumatic materials handling technology
- Shipbuilding
- Power generation industry
- Transport of hazardous materials (EN 14432)



Aluminium version. Available Sizes: DN 50 - DN 400



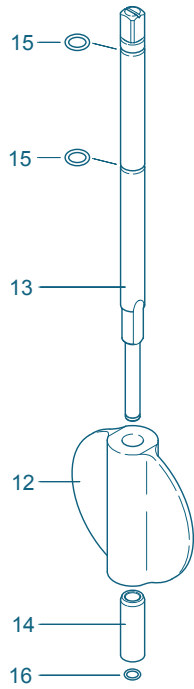
Z 011-A with bare shaft end according to EN ISO 5211

\* According to mounted actuator Subject to change without notice

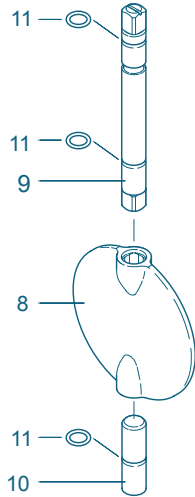
Subject to change without notice

# WAFER PATTERN BUTTERFLY VALVE TYPE Z 011-A

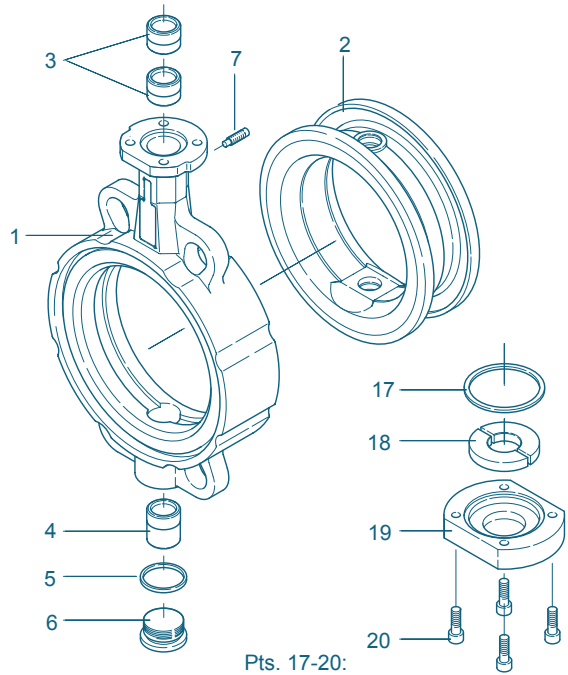
## MATERIAL SPEZIFICATION AND PARTS LIST



TS-Version



Version with splitted shaft



Pts. 17-20:  
Cover plate for  
valve ≥ DN 350

Pt.	Description	Material	Material-No.	ASTM	Pt.	Description	Material	Material-No.	ASTM
<b>1</b>	<b>Body</b>				<b>9/10</b>	<b>Shafts</b>			
	Aluminiumalloy	G-AISI9Cu3	3.2163	B 380.1		Stainless Steel	X39CrMo17-1	1.4122	
		G-AISI8Cu3	3.2161	A 380			X14CrMoS17	1.4104	430 F
	Grey Cast Iron	GG-25	0.6025	40 B			X5/(X2)CrNiMo17-12-2	1.4401/1.4404	316
	Nodular Cast Iron	GGG-40	0.7040	60-40-18			Hastelloy	2.4883	Hastelloy
		GGG-40.3	0.7043			Aluminum Bronze	CuAl10Ni	2.0975	
	Carbon Steel	GS-C25	1.0619	WCB	<b>11</b>	<b>O-ring</b>			
	Stainless Steel	G-X5CrNiMo19-11-2	1.4408	CF8M		NBR	Nitrile butadiene rubber		
<b>2</b>	<b>Seat</b>					FPM	Fluorocarbon rubber		
	NBR	Nitrile butadiene rubber			<b>12</b>	<b>TS-disc</b>			
	EPDM	Ethylene propylene diene monomer rubber				Nodular Cast Iron	GGG-40	0.7040	60-40-18
	CSM	Chlorosulfonated polyethylene rubber				Stainless Steel	G-X5CrNiMo19-11-2	1.4408	CF8M
	FPM	Fluorocarbon rubber				Aluminium Bronze	G-CuAl10Ni	2.0975	C 95800
	VSI	Silicone rubber				Coating	Halar,Rilsan		
	SBR-green	Styrene butadiene rubber				Surface quality	electropolished, mirror finished		
<b>3/4</b>	<b>Bearing bush</b>				<b>13</b>	<b>TS-shaft</b>			
	Brass	MS 58	2.0401	B 45		Stainless Steel	X14CrMoS17	1.4104	430 F
	Polyamide	PA 66					X39CrMo17-1	1.4122	
	PTFE	Polytetrafluorethylene					X5CrNiMo17-12-2	1.4401	316
<b>5</b>	<b>Seal DIN 7603</b>					Aluminum Bronze	CuAl10Ni	2.0975	
	Copper	Cu		Copper	<b>14</b>	<b>Sleeve</b>			
<b>6</b>	<b>Plug screw DIN 908</b>					Stainless Steel	X5CrNi18-10	1.4301	304
	Stainless Steel	G-X5CrNiMo19-11-2	1.4408	CF8M	<b>15</b>	<b>O-ring</b>			
<b>7</b>	<b>Set screw DIN 915</b>					NBR	Nitrile butadiene rubber		
	Steel	45 H galvanized				FPM	Fluorocarbon rubber		
	Stainless Steel	A4-70		B8M	<b>16</b>	<b>Retaining ring</b>			
<b>8</b>	<b>Disc</b>					Stainless Steel	X39CrMo17-1	1.4122	
	Steel	St 52.3	1.0570	572-50	<b>17</b>	<b>O-ring</b>			
	Stainless Steel	G-X5CrNiMo19-11-2	1.4301	304		NBR	Nitrile butadiene rubber		
		G-X6CrNiMo18-10	1.4408	CF8M	<b>18</b>	<b>Shaft retainer</b>			
		X2CrNiMo17-12-2	1.4404	316 L		Brass	MS 58	2.0401	B 45
		X6CrNiMoTi17-12-2	1.4571	316 Ti	<b>19</b>	<b>Cover plate</b>			
		G-X2CrNiMoN26-7-4	1.4469	F 51		Grey Cast Iron	GG-25	0.6025	40 B
		Hastelloy	2.4883	Hastelloy	<b>20</b>	<b>Screw</b>			
	Aluminium Bronze	G-CuAl10Ni	2.0975	C 95800		Steel	45 H galvanized		
	Coating	Halar, Rilsan, NBR, EPDM				Stainless Steel	A2-70		B 8
	Surface quality	electropolished, mirror finished					A4-70		B8M
						Other materials upon request			

Subject to change without notice

# WAFER PATTERN BUTTERFLY VALVE TYPE Z 011-A

## TORQUE

- The values listed in the table are initial breakaway torques, taken with liquids and lubricant media.
- Please regard these as approximate values, as the objective value depends on different factors like pressure, medium, rubber, quality, temperature ... etc.
- Our engineers look forward to help you with exact values for your application.
- Powdery (non-lubricant) media  
Md x 1,3
- Dry gases/high viscous media  
Md x 1,2

DN [mm]	Size [in]	Adapted disc size pressure rating			
		3 bar disc	6 bar disc	10 bar disc	16 bar disc
20	¾	5	5	5	-
25	1	5	5	5	-
32	1¼	5	5	5	-
40	1½	8	8	8	8
50	2	9	9	9	9
65	2½	18	18	18	18
80	3	8	10	18	24
100	4	9	18	28	37
125	5	15	22	45	59
150	6	36	45	78	125
200	8	59	76	140	200
250	10	150	180	200	240
300	12	200	240	280	360
350	14	350	540	610	700
400	16	420	620	750	850
450	18	720	746	860	1500
500	20	900	1100	2255	3690
600	24	1050	2100	3000	5830
700	28	1560	2240	3450	8100
800	32	2070	3800	6600	11200
900	36	2700	4900	7100	14500
1000	40	4600	6780	11500	24400
1200	48	7800	12000	21000	44000

All values in Nm

## K<sub>V</sub>-VALUES

- The K<sub>V</sub>-values [m³ per hour] is the flow of water at a temperature of 5°C to 30°C (41°F to 86°F) at Δp of 1 bar
- The K<sub>V</sub>-values specified are based on tests carried out by the Delfter Hydraulics Laboratories, the Netherlands
- Permissible velocity of flow  
Vmax 4,5 m/s for liquids,  
Vmax 70 m/s for gases
- The throttle function is linear at an angle 30° to 70°
- Avoid cavitation

For further values, please contact our engineers.

DN [mm]	Size [in]	Opening angle α°							
		20°	30°	40°	50°	60°	70°	80°	90°
20	¾	-	3,46	5,95	7,97	9,7	11,2	12,8	14,5
25	1	-	3,53	7,33	11,5	15,8	20,0	24,0	27,3
32	1¼	-	2,56	7,97	15,5	24,2	33,0	40,8	46,6
40	1½	0,94	4,96	11,9	20,7	30,4	40,2	49,0	55,8
50	2	3,84	10,1	20,7	34,4	49,7	65,2	79,5	91,2
65	2½	9,5	16,6	39,1	72,6	113	157	199	235
80	3	15,6	20,6	51,4	102	165	234	304	368
100	4	24,9	39,8	96,5	183	288	398	503	589
125	5	51,8	67,2	135	256	428	652	926	1250
150	6	76,5	97,3	197	375	629	957	1360	1830
200	8	137	187	373	697	1160	1760	2510	3400
250	10	227	271	563	1090	1850	2830	4010	5390
300	12	287	409	820	1550	2610	4050	5880	8120
350	14	399	488	1070	2110	3590	5480	7760	10400
400	16	557	703	1360	2600	4470	7060	10400	14600
450	18	716	907	1810	3440	5830	8980	13000	17800
500	20	875	1110	2250	4280	7180	10900	15500	20900
600	24	1230	1550	3150	6010	10090	15400	21800	29400
700	28	1100	1770	3590	6610	10900	16400	23200	31400
800	32	1670	2680	5450	10000	16500	24900	35200	47600
900	36	1960	3150	6390	11800	19300	29200	41300	55900
1000	40	2430	3890	7910	14600	23900	36100	51100	69100
1200	48	3500	5620	11400	21000	34500	52100	73800	99800

Subject to change without notice